

REVIEWS

Inventory of Rare and Endangered Vascular Plants of California. Third Edition. By JAMES PAYNE SMITH, JR. and RICHARD YORK. The California Native Plant Society. 909 12th St., Suite 116, Sacramento, CA 95814. 1984. \$10.95 plus \$1.50 postage.

Publication of the 3rd edition of the *Inventory of Rare and Endangered Vascular Plants of California* continues the California Native Plant Society's (CNPS) long history of interest in providing *the* handbook source on endangered and rare plant species in the state. This edition expands and refines work first begun in 1967 by G. Ledyard Stebbins as a list of all plants in California with a range of less than 100 miles. That original list, enhanced by Roman Gankin and followed by the tireless efforts of Alice Howard and Robert Powell, culminated in the 1st edition printed in 1974. The 2nd edition, published in 1980, was produced just as the Society joined forces with the computerized California Natural Diversity Data Base (then with The Nature Conservancy, now in the Department of Fish and Game) to track the state's data on rare and endangered plant occurrences. This 3rd edition incorporates the latest Data Base records to cover a total of 1449 species of varying degrees of rarity in the state. Clearly presented and expanded introductory material sets the stage for the four lists of plants that follow. The result is the single most useful compendium on rare and endangered plants of California.

Computerization of the *Inventory* has assured a lower rate of typographical errors for this enormous number of scientific names than in previous editions. The book's format, combined with a clean-looking type font, is quite readable, considering an average page provides facts on 11 different species. Although the general structure follows that of the past editions, several positive changes were incorporated. A major change has occurred in the names and order of the lists of plants. In an effort to align the lists more closely with state law concerning endangered species, the Society adopted the state's definitions of rare and endangered.

List 1 reflects those species that CNPS judges to meet the criteria for state listing. It has been divided into two parts (equivalent to Lists 1 and 2 of the 2nd edition): 1A, those species presumed to be extinct in the state, and 1B, those extant species with active threats to their existence. List 2, "Plants Rare or Endangered in California, But More Common Elsewhere," and the newly created List 3, "Plants About Which We Need More Information," also involve plants that could meet state designation requirements. All told, these three lists focus on over 900 species, at least 15% of the state's flora, that may warrant protection; securing their protection would be a hefty challenge for any conservation group. The final roster, List 4, offers a "watch list" containing approximately 500 plants of regional rarity or localized distribution that may eventually be moved to higher lists of concern should their habitats or numbers decline significantly.

The addition of a data field called "Notes" within each species entry is very helpful. Now under a species entry, one not only finds the common name, family, current legal or suggested status, and readable codes for county and topographic quad of occurrence, but also information about threats to the species, whether or not CNPS has written a status report about it, or importantly, a citation of the original description for species published since Munz's *A California Flora*. Another improvement is the removal of the ever-confusing species acronyms, the "taxon codes." They may be a good shorthand method for working with a small data set, but when dealing with so many species they lose that quick reference appeal. In addition, a typo in a taxon code completely mystifies its meaning. I don't think they will be missed.

To lessen the confusion about which plant is on which legal list, an appendix of state and federally listed species is also included. Finally, the greatly expanded ref-

erence section is also helpful, directing students of our endangered flora to further taxonomic or ecological publications on individual species.

This volume is a must for any rare plant enthusiast, environmental consultant, or agency biologist who deals with endangered, threatened, or rare plants. It is the first step for many professionals faced with conducting a rare plant field survey. The data in the *Inventory* are backed by herbaria and field work records contributed by the Society and other botanists and housed in the Department of Fish and Game's Natural Diversity Data Base. As with any publication of this type, however, it is out of date even before it is off the presses. CNPS recognized this fact, promoting the *Inventory* as a place to start when needing rare plant data, while encouraging use of the Data Base for the latest locational information. CNPS goes one step further, including an excellent discussion by member and botanist James R. Nelson on rare plant inventorying techniques, emphasizing that no survey is complete with only book-learned facts—one must get to the field before deciding on presence or absence of rare plants at a site.

Habitat information is just about the only facet of data missing from these concise species entries. A coding system for habitats is being contemplated by the authors for the next edition. It would be a welcome inclusion. I found only one organizational drawback of the book—its organization by species instead of by geographical location. Users needing to determine which species are found within a particular geographic area must essentially read the entire book, picking out the appropriate quad codes or county names. To reverse the information and print it by quadrangle map with all the species found therein would be marvelous but would just about double the size and cost of the document. It also would be quickly out of date and seeing such lists could lull uninformed consultants or botanists into a false sense of security about the presence or absence of endangered plants. A potential compromise for this problem may be county lists of species, giving those in need a starting point for further investigation.

Students of rare plant distribution will revel in the information crunched into these pages; in today's world of high-priced books, I can't think of a wiser use of funds to start or complete a library on California's endangered and rare plants.—SUSAN COCHRANE, Coordinator, Endangered Plant Program, California Dept. Fish and Game, 1416 9th Street, Sacramento 95814.

The Botany and Natural History of Panama: La Botanica e Historia Natural de Panama. Edited by WILLIAM G. D'ARCY and MIREYA D. CORREA A. Published as volume 10 of Monographs in Systematic Botany from the Missouri Botanical Garden. 455 pp. \$48.00 + 4% shipping. ISBN 0-915279-03-7 (paperbound). (Available from Dept. 11, MBG, P.O. Box 299, St. Louis, MO 63166.)

In April 1980, a symposium was convened in Panama to signal the completion of the Missouri Botanical Garden's Flora of Panama project, the publication of which was begun in 1943. That it took nearly 40 years is some indication of the overwhelming diversity in the tropics and the amount of work necessary to try to bring into focus even the basic taxonomy of the tropical biota. The editors deserve high praise for this volume; it reflects what must have been a highly successful symposium.

The volume does not cover, or try to, the spectrum of organisms one might consider significant in tropical regions (bats, for instance, are not covered in any of the 48 articles), but coverage does include zoology, anthropology-ethnology-linguistics, meteorology (one paper), demography and man's influence on the landscape, and conservation, in addition to a broad range of botanical topics. The gaps may reflect merely that the editors are completely at the mercy of whatever symposium participants were available. In a sense, this is a beautifully complementary volume to Janzen's Costa Rican Natural History, a mini-encyclopedia that highlights particular creatures in the forests and details of what they do, also based to some extent on what specialists were available.